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**PATENT APPLICATION**  
ATTORNEY DOCKET NO. TSAI-P001

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Kuen-Yu Tsai  
Application No. 10/709,458  
Filed: 05/06/2004  
Title: METHOD FOR DESIGN OF MULTI-  
OBJECTIVE ROBUST CONTROLLERS

Examiner: Patel, Ramesh B.  
Group No.: 2121  
Confirmation No. 3457  
CERTIFICATE OF MAILING  
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**FORM 1449**

**Other Documents**

Examiner Initial	No.	Author, Title, Place, Date (e.g. Journal) of Publication
	1	J. Doyle, "Analysis of feedback systems with structured uncertainties," IEE Proceedings, 129(6), part D, November 1982
	2	S. Skogestad et al, "Multivariable Feedback Control," John 1996
	3	K. Zhou, "Essentials of Robust Control," Prentice Hall, 1998
	4	"Robust control toolbox 3 user's guide," The Mathworks, Inc. 2005
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	6	A. Packard et al "Linear, multivariable robust control with a $\mu$ perspective," ASME J. of Dynamics, measurement, and Control, vol. 115 June 1993, pp. 426-438
	7	A. Dahleh et al, "Control of Uncertain Systems," 1996
	8	J. Doyle et al "State-space solutions to standard $H_2$ and $H_{\infty}$ control problems," IEEE Transactions on Automatic Control, 34(8): 831-847, 1989
	9	P. Gahinet et al "A linear matrix inequality approach to $H_{\infty}$ control," International J. Robust Nonlinear Control, (4)421-448, 1994
	10	B. Rafaely et al, " $H_2/H_{\infty}$ active control of sound in a headrest: design and implementation," IEEE Trans. Control System Technology, vol. 7, no. 1, January 1999
	11	P. Titterton, "Practical method for constrained-optimization controller design: $H$ or $H$ optimization with multiple $H_2$ and/or $H_{\infty}$ constraints," IEEE Proceedings of ASILO 1996
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	13	S. P. Wu et al, "FIR filter design via spectral factorization and convex optimization," in Applied Computational Control, Signal and Communications, 1997
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	15	S. Boyd et al, "A new CAD method and associated architectures for linear controllers," IEEE Transactions on Automatic Control, vol.33, p.268, 1988
	16	A. Lanzon et al "A Frequency Domain Optimisation Algorithm for Simultaneous Design of Performance Weights and Controllers in $\mu$ -Synthesis", Proceedings of the 38th IEEE Conference on Decision and Control, Vol. 5, pp. 4523-4528, Phoenix, Ariz., USA, December 1999
	17	A. Lanzon, "A State-Space Algorithm for the Simultaneous Optimisation of Performance Weights and Controllers in $\mu$ Synthesis", Proceedings of the 39th IEEE Conference on Decision and Control, Vol. 1, pp. 611-616, Sydney, Australia, December 2000
	18	A Lanzon, Ph.D. Thesis: "Weight Selection in Robust Control: An Optimisation Approach", University of Cambridge, UK, October 2000
	19	K. Tsai and H. Hindi, "DQIT: $\mu$ -synthesis without D-Scale Fitting," American Control Conference 2002, pp. 493-498
	20	K. Tsai, Design of Feedforward and Feedback Controllers by Signal Processing and Convex Optimization Techniques, chapter 2, chapter 3, and page 129-130
	21	H. Hindi et al, "Computing Optimal Uncertainty Models from Frequency Domain Data," IEEE Conference on Decision and Control, 3:2898-2905, December 2002
	22	B. Boulet et al An LMI Approach to IMC-Based Robust Tunable Control, American Control Conference 2003, pp 821
	23	V. Oppenheim et al, Discrete-Time Signal Processing, Prentice Hall, 1989
Examiner		Date Considered

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.